

REMARKS

By this Response, claims 9, 11 and 18 have been amended. No claims have been added or canceled by this response. Claims 1-8 have been previously withdrawn. Claims 9-18 and 20 remain pending.

Rejection of Claims 9-12, 15, 18 and 20 Under 35 U.S.C. § 102(e)

In the Final Office Action, the Examiner rejected claims 9-12, 15, 18 and 20 under 35 U.S.C. § 102(e) as being unpatentable over *Kent* (U.S. Patent No. 6,130,016). This rejection is respectfully traversed.

The subject matter of each of independent claims 9 and 18 now further clarify that the reticle layer (the reflective layer deposited on the reticle substrate) includes each of a patterned feature area and a test pattern area. The patterned feature area corresponds to a desired circuitry pattern. A resist material is patterned by stepping the reticle containing both the patterned feature area and test pattern area. It is the exposed resist which is then inspected for light and dark regions within the test pattern area as this will directly correspond to variances in the adjacent patterned feature area of the resist material.

It is the Examiner's position that *Kent* discloses the limitations of the claimed invention. However, the method and device of *Kent* require two reticles, one with a test area and one with the desired semiconductor features. This requirement of *Kent* is ignored by the repeated assertion that element 220 corresponds to the claimed pattern feature area and element 230 corresponds to the claimed test pattern area. In fact and from a plain reading of *Kent*, element 220 refers generally to a "plurality of patterns" with

element 230 pointing directly to a "series of structures" within one of the plurality of patterns. Even further, FIG. 3A only illustrates a "calibration reticle", and "exemplary embodiment has line structures 230 that are spaced to give each of the plurality of patterns 220 a predetermined pitch, one of which is intended to mimic a pitch value of a semiconductor structure reticle. See column 6, lines 22-26 of *Kent*. Thus a reticle with desired semiconductor features is a completely separate reticle from the reticle 200. Even that portion of *Kent* referred to by the Examiner in the Advisory Action of January 22, 2008 states that the test mask is formed with patterns on the **calibration** reticle, not the semiconductor structure reticle.

The Examiner has continued to assert that "the calibration reticle patterns both the feature and test pattern areas, when calibrating the device for operation. There is nothing in the *Kent* disclosure that limits the calibration reticle from patterning both the feature and test areas". To the contrary, *Kent* specifically separates the functions of the calibration reticle and semiconductor structure reticle, thus clearly limiting the calibration reticle to the disclosed function therein. Even further, *Kent* is extremely specific about why the functions are separated. For example, a plurality of test patterns can be formed on the calibration reticle, each pattern corresponding to a predetermined pitch of a semiconductor structure reticle. The calibration reticle can therefore be reused for any number of calibrations. See column 6, lines 57-59 of *Kent*. The disclosure of *Kent* itself limits the calibration reticle from patterning the feature area, or separate reticles would not be provided.

As the Examiner is aware, to anticipate a claim, the reference must teach every element of the claim. "A claim is anticipated only if each and every element as set forth

in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See also *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989) which states "The identical invention must be shown in as complete detail as is contained in the ... claim". Such is not the case with *Kent*.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 9-12, 15, 18 and 20 under 35 U.S.C. § 102(e). Applicants submit that claims 10-12, 15; and claim 20 are in condition for allowance, at least by virtue of their dependency from allowable claims 9 and 18, respectively.

Rejection of Claims 13 and 16-17 Under 35 U.S.C. § 103(a)

In the Final Office Action, the Examiner rejected claims 13 and 16-17 under 35 U.S.C. § 103(a) as being unpatentable over *Kent* (U.S. Patent No. 6,130,016), as applied to claims 9-12 above, in view of *Ausschnitt et al.* (U.S. Patent No. 5,914,784). This rejection is respectfully traversed.

Claim 13 is directed to the reoccurring line/space structure having a pitch of less than about $\frac{3}{2}$ the wavelength in use. Claims 16 and 17 are directed to visually inspecting the material using an optical microscope and further changing a focus on the optical microscope to cause light and dark regions to become more or less pronounced.

It is the Examiner's position that *Kent* reads on the claims as applied above, but does not disclose the claimed limitation(s) of: wherein said reoccurring line/space structure has a pitch of less than about $\frac{3}{2}$ the wavelength in use; wherein visually

inspecting said material includes using an optical microscope; and further including changing a focus on the optical microscope to cause light and dark regions to become more or less pronounced. *Ausschnitt et al.* are applied as disclosing visually inspecting and changing a focus, and the Examiner asserts that the wavelength recitation would be obvious to one of ordinary skill in the art.

To the contrary, *Ausschnitt et al.* simply disclose using a microscope to determine the edge of an object and do not overcome the deficiencies noted above in connection with *Kent*.

With regard to the Examiner's comments regarding case law on ranges, it is respectfully acknowledged that it is not inventive to discover the optimum or workable ranges by routine experimentation. However, if the variable is "result effective" then it is acceptable to seek optimization of that variable. See MPEP § 2144.05 IIB. In the original specification, beginning at paragraph [0031] thereof, is an explanation of why the pitch of the test pattern 200 is of importance. The magnitude of the variance in the CD of the patterned material as designed depends on the pitch. It is believed that the pitch of the test pattern 200 is related to the optical wavelength of the exposure tool used to pattern the wafer. A relationship of the pitch of the test pattern to the optical wavelength of the exposure tool is a result effective variable neither taught nor suggested by the applied references.

Thus, the combination, even if made, fails to teach or suggest the claimed invention.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claims 13 and 16-17 under 35 U.S.C. § 103(a). Applicants

submit that claims 13 and 16-17 are further in condition for allowance at least by virtue of their dependency from allowable claim 9.

Rejection of Claim 14 Under 35 U.S.C. § 103(a)

In the Final Office Action, the Examiner rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over *Kent* (U.S. Patent No. 6,130,016), as applied to claim 9 above, in view of *Asano et al.* (U.S. Patent No. 6,741,334). This rejection is respectfully traversed.

Claim 14 depends from claim 9 and recites "wherein the test pattern area is located in a scribe region defined by said patterned area".

It is the Examiner's position that *Kent* fails to disclose the limitation of claim 14, and has therefore applied *Asano et al.* for this teaching, relying on column 5, lines 45-60 thereof.

To the contrary, since *Asano et al.* do not address providing a reticle layer including a patterned feature area and a test pattern area, the missing teachings described in connection with *Kent* have not been overcome. Thus, the combination of *Kent* and *Asano et al.* fail to teach or suggest the subject matter of claim 14.

Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 14 under 35 U.S.C. § 103(a). Applicants submit that claim 14 is further in condition for allowance at least by virtue of its dependency from allowable claim 9.

CONCLUSION

In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 20-0668.

Respectfully submitted,

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